

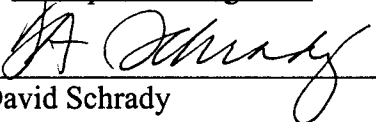
NAVAL POSTGRADUATE SCHOOL  
Monterey, CA 93943-5000

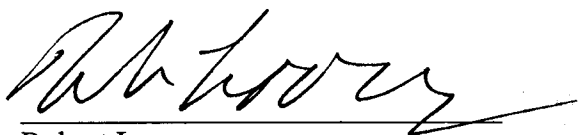
**PROPOSAL FOR RESEARCH**

Submitted to: LCDR John Ruck, Office of the Chief of Naval Operations, N816D6, 2000 Navy Pentagon, Washington, DC 20350-2000

1. Title: Estimating Economic Benefits of Naval Forward Presence
2. Focus Areas: Forward Presence and Economic Activity
3. Period of proposed research: 1 October 1999 to 30 September 2000
4. Total Estimated Cost: \$ 105,000

5. Principal Investigators:

  
David Schrady

  
Robert Looney

6. Objective: The objective of this research is to evaluate the linkage between Naval forward presence and economic security, peacetime interests and globalization.

7. Keywords: Forward Presence, Global Economy

8. DOD Key Technology Area: Modeling and Simulation

- 9a. Recommend Approval:

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Kevin Wood, Associate Chairman for Research

- 9b. Recommend Approval:

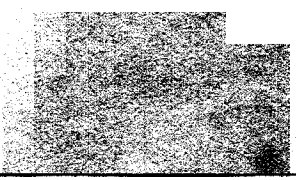
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Richard E. Rosenthal, Chairman  
Department of Operations Research

10. Reviewed

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Danielle Kuska  
Director, Research Administration

11. Approved

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D.W. Netzer  
Associate Provost and Dean of Research



# **Estimated Benefits of Naval Forward Presence: Improved Economic Security, Peacetime Interests and Globalization**

## Executive Summary

The proposed research will evaluate the changing linkages between Naval Forward Presence and economic security/peacetime interests brought about by rapid technological change and accelerated globalization. In doing so, the main focus of effort will be to devise and apply new methodologies to the measurement of the economic benefits such as reduced shipping risk, and expanded trade associated with Naval Forward Presence/Crisis Response. Based on these estimates the study will then develop productive ways to shape ("frame") the earlier the NDU/UnderSECNAV study on globalization.

## Background

In FY97 the Naval Postgraduate School was tasked by N8C-N81-N3/N5 to assess whether it was possible to quantify the economic benefits derived from Naval Forward Presence. This analysis focused on the links between naval crisis response and oil future prices. Several major findings emerged from this research:

- Most important, it is possible to develop procedures to measure some of the economic impacts of Naval Forward presence.
- Economic Impacts can be measured in terms of dollar cost savings and or additional dollar resources available to the economy.
- In some cases, these economic impacts can be significant. They may also persist over a fairly long period and across the economies of a large number of US allies.
- While these initial estimates of the economic benefits associated with Naval Forward Presence are high, it is apparent that they underestimate the complete benefits associated with crisis response.

## Proposed Research

The FY97 study has been widely circulated and critiqued, and the economic analysis described above has been well received. The proposed research is designed to extend and expand our earlier efforts. In particular, we are interested in assessing the manner in which the accelerating process of economic globalization and technological change will alter the economic impacts stemming from Naval forward presence. Specifically will continued globalization increase the potential for economic benefits derived from Naval forward presence? If so, what is the rough

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magnitude of these effects? In which situations is Naval forward presence likely to produce the greatest net economic benefits?

Our earlier work leads us to believe that positive net economic benefits associated with Naval forward presence extend well beyond the oil markets. Unfortunately, a data bias results in an underestimation of these effects. The costs of forward presence are fairly specific to the domestic economy, susceptible in principle to definite calculation in economic terms and are shared, more or less equitably by the citizens of the country. In contrast, the benefits of that forward presence are much different in character and incidence. Moreover, the benefits themselves are difficult to calculate in precise terms due to the presence of these externalities (value created but not reflected in market prices), and intangible considerations such as the value of national security and the like. Consequently, the public/popular press perception of Naval forward presence derived from these studies is often that the costs of this effort far exceed the economic benefits derived.

More significantly, the United States economy has evolved to the point where, through technology, R&D and military capabilities such as forward presence, we have a comparative advantage in providing security services. In economic terms, activities of this type raise, in addition to the measurement problems noted above, questions as to the proportion of the protective service benefits that accrues to the U.S. economy and the proportion that accrues to the rest of the world under current international trade arrangements. Clearly the ability of advanced countries meagerly endowed with indigenous natural resources (e.g., Germany and Japan) to multiply their national incomes over recent decades rested on the operation of a liberal international trade system. These countries would be seriously impacted if the current trading system crumbled.

Admittedly putting a value on these benefits and further attributing a certain share of that value to Naval Forward Presence raises a whole set of complex conceptual and measurement issue. Most prior studies have often lacked credibility because ultimately they had to rely almost entirely on a series of often very arbitrary assumptions. Relying exclusively on hard data that proxies or reflects the benefits derived from crisis response, the present study proposes to take a fresh look at these issues and, in doing so, quantify some of the economic benefits derived from naval forward presence. For instance:

- With regards to shipping and international trade, the proposed study will attempt to quantify these benefits through identifying the pattern of shipping insurance rates associated with increased threats/risk to ocean transport. These will then be compared with those in effect after Naval crisis response.
  - With regard to the value of the dollar, forward markets reflect the concern over the security of shipping lanes. In a manner similar to our previous study on oil prices, an attempt will be made to link crisis response to shifts in forward currency markets and ultimately the economic benefits accruing to the US economy.
  - As noted earlier the study will develop productive ways to shape ("frame") the earlier the NDU/UnderSECNAV study on globalization.
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### Output Expected

The proposed research will culminate in a report detailing the main findings. The completion date of the report is October 1, 2000. A full set of briefing slides will also be provided as well as all documentation and backup materials.

### Time and cost

The economic analysis section of the FY2000 research will take an elapsed time of four academic quarters to complete. Together with labor costs, the analysis will require additional databases, software, equipment and supplies, bringing the total cost to \$105,000.

### Personnel

Dr. Robert E. Looney	90 Days
Dr. David Schrady	30 Days
CDR Matt Boensell	30 Days

## **RESUMES OF THE INVESTIGATORS**

### **Robert Looney Professor of National Security Affairs**

Dr. Looney joined the faculty of the Naval Postgraduate School in 1979. Prior to that, he was a macro-economist at Stanford Research Institute where he served as an economic advisor to the governments of Iran, Saudi Arabia and Mexico. His research has focused on economic modeling, oil markets and resource issues in developing and transitional economies. He is the author of twenty books including: *Economic Policy Making in Mexico*; *The Economic Causes and Consequences of Defense Expenditures in the Middle East and South Asia*; *Economic Origins of the Iranian Revolution*; *the Political Economy of Latin American Defense Expenditures*; and *Economic Development in Saudi Arabia: Consequences of the Oil Price Decline*. He has published over two hundred professional papers including articles in OPEC Review, Resources Policy, Journal of Policy Modeling, Journal of Economic Modeling, Journal of Energy and Development, Iranian Studies, Mexican Studies, International Organization, Middle Eastern Studies, Regional Studies and Contemporary South Asia. Dr. Looney is the Library of Congress, Handbook for Latin American Studies editor for the Mexican economy. He is also a contributing editor of American Journal of Economics and Sociology, Political Crossroads, and Journal of Third World Studies.

### **David Schrady Distinguished Professor of Operations Research**

Dr. Schrady joined the faculty in the Department of Operations Research in 1965 and, during the period from 1966 to 1974, conducted research in the areas of in-service support logistics (inventory control, allowance list construction, and inventory record accuracy) and tactical analysis (influence of sensor errors on successful mission accomplishment). From 1974 through 1987, he served successively as chairman, Department of Operations Research

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and Administrative Sciences, Dean of the Division of Information and Policy Sciences, and Provost and Academic Dean of the Naval Postgraduate School. He was the president of the Military Operations Research Society (1978-79), the president of the Operations Research Society of America (1983-84), and is currently serving as the treasurer of the International Federation of Operational Research Societies. He has been a consultant to the BDM Corporation, Litton-Mellonics, the Decision Studies Group, the Naval Supply Systems Command, and the Center for Naval Analysis. He is the recipient of the Wanner Memorial Award of the Military Operations Research Society (1984), the Navy Superior Civilian Service Award (1987), the Goodeve Medal of the Operational Research Society (1992), and the Kimball Medal of the Operations Research Society of America (1994).

**Matthew Boensel**  
**Commander, U.S. Navy**

Commander Boensel joined the NPS faculty in June, 1999 as a military instructor and the Chair of Applied Systems Analysis. He was commissioned in 1980 upon graduation from the U.S. Naval Academy and was designated a Naval Flight Officer in December of 1981. Operational tours include Patrol Squadron Nine (VP-9) where he served in the maintenance and training departments; USS Independence (CV-62) where he served as a Tactical Action Officer and the Operations Training Officer; and Patrol Squadron Forty-Seven (VP-47), where he served as Administrative Officer, Operations Officer, and Detachment Officer-in-Charge. Staff tours include Patrol Wing Ten (CPW-10) as Current Operations Officer; Office of the Chief of Naval Operations (OPNAV) as a Aviation Readiness Analyst (N-814); Office of the Deputy Chief of Staff, Logistics, U.S. Army, Europe (USAREUR), as Deputy Chief of the Plans and Operations Division. He earned his Master of Science Degree in Operations Research from the Naval Postgraduate School in 1988.

## PROPOSAL BUDGET

Period Covered: 1 October 1999 to 30 September 2000

Title: Estimating Benefits of Naval Forward Presence

Sponsor: DCNO, N8

### A. LABOR

	Time	Funding
1. Faculty		
Professor David Schrady	0.125 myr	\$14,366
Professor Robert Looney	0.375 myr	33,430
2. Total Salary		47,796
3. Labor Acceleration (leave & fringe benefits)		20,552
4. TOTAL LABOR		68,348

### B. NON-LABOR

1. Travel:		
Domestic		15,000
TOTAL TRAVEL		15,000
2. Equipment/Supplies:		
a) Equipment		3,000
b) Data/Software/Supplies		5,130
TOTAL EQUIPMENT		8,130

C. INDIRECT COST:	13,522
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D. TOTAL PROPOSAL	105,000
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David Schrady

Date \_\_\_\_\_